Amendments in the claims:

Please cancel claims 1-18 and 20. New claims 22-39 are added, as indicated below. No new matter has been added.

1-21. (cancelled)

22. (new) An optical switch for use in an asynchronous, wavelength-division-multiplexing, fiber-optic communication network, wherein the optical switch comprises:

at least one fiber-optic input;

at least one fiber-optic output; and

a buffer unit comprising a plurality of queues,

wherein the optical switch is arranged to:

receive data packets at the fiber-optic input;

assign a received data packet, having an associated destination, to one of the queues;

determine the number of vacant output wavelengths for the destination; and

schedule the data packet from the queue only when at least a minimum number, greater than one, of output wavelengths for the destination are vacant.

23. (new) The optical switch of claim 22, wherein each of the plurality of queues is associated with a respective range of data-packet lengths and is further associated with a respective minimum number of output wavelengths, and wherein the optical switch is further arranged to:

assign the received data packet to one of the queues according to the length of the data packet; and

schedule the data packet from the queue only when at least the associated minimum number of output wavelengths for the destination are vacant, wherein the minimum number of output wavelengths is smaller for a queue associated with relatively-short data packets than it is for a queue associated with relatively-long data packets.

24. (new) The optical switch of claim 23, wherein the buffer unit comprises at least first, second and third queues associated with respective first, second and third ranges of data-packet lengths of increasing size, and further associated with first, second and third respective minimum numbers of output wavelengths of increasing size.

25. (new) The optical switch of claim 22, further arranged to buffer only a fraction of the data packets passing through the optical switch.

26. (new) The optical switch of claim 22, comprising a plurality of fiber-optic inputs and at least one fiber-optic output which operates at a higher bit-rate than the plurality of fiber-optic inputs.

27. (new) The optical switch of claim 22, further adapted to operate within a network selected from the group consisting of: an optical packet switched network; an optical burst switched network; an electronic packet switched network; an electronic burst switched network; and a wavelength-division-multiplexed network.

28. (new) The optical switch of claim 22, wherein the buffer unit comprises an electronic buffer and is configured to buffer data packets electronically.

29. (new) The optical switch of claim 22, configured to receive wavelength-division-multiplexed signals at the fibre-optic input.

30. (new) The optical switch of claim 22, configured to send wavelength-division-multiplexed signals from the fibre-optic output.

31. (new) A method of switching data in an asynchronous, wavelength-division-multiplexing, fiber-optic communication network, comprising:

receiving data packets at a fiber-optic input of an optical switch;

assigning a received data packet, having an associated destination, to one of a plurality of queues in a buffer unit;

determining the number of vacant output wavelengths from the optical switch for the destination; and

scheduling the data packet from the queue only when at least a minimum number, greater than one, of output wavelengths for the destination are vacant.

32. (new) The method of claim 31, wherein each of the plurality of queues is associated with a respective range of data-packet lengths and is further associated with a respective minimum number of output wavelengths, the method further comprising:

assigning the received data packet to one of the queues according to the length of the data packet; and

scheduling the data packet from the queue only when at least the associated minimum number of output wavelengths for the destination are vacant, wherein the minimum number of output wavelengths is smaller for a queue associated with relatively-short data packets than it is for a queue associated with relatively-long data packets.

33. (new) The method of claim 32, comprising:

assigning received data packets to at least first, second and third queues associated with respective first, second and third ranges of data-packet lengths of increasing size; and

scheduling the data packets from the first, second and third queues only when at least first, second and third respective minimum numbers of output wavelengths for the destinations of the data packets are vacant, wherein the first, second and third minimum numbers are of increasing size.

34. (new) The method of claim 31, further comprising buffering only a fraction of the data packets passing through the optical switch.

35. (new) The method of claim 31, further comprising receiving data packets at a plurality of fiber-optic inputs at a receive bit-rate and sending a data packet from a fiber-optic output at a send bit-rate which is higher than the receive bit-rate.

36. (new) The method of claim 31, wherein the network is a network selected from the group consisting of: an optical packet switched network; an optical burst switched network; an electronic packet switched network; an electronic burst switched network; and a wavelength-division-multiplexed network.

37. (new) The method of claim 31, wherein the buffer unit comprises an electronic buffer, the method further comprising buffering data packets electronically in the buffer unit.

38. (new) The method of claim 31, further comprising receiving wavelength-division-multiplexed signals at the fibre-optic input.

39. (new) The method of claim 31, further comprising sending wavelength-division-multiplexed signals from the fibre-optic output.